

Claims

1. A method of assessing cognitive impairment of a user, including the steps of:
 - 5 (a) presenting a visual test stimulus to the user for a pre-determined test stimulus exposure duration;
 - (b) masking the test stimulus;
 - (c) measuring a response from the user, the response providing information about the user's perception of a characteristic of the test stimulus together with
10 the time taken for the user to respond;
 - (d) repeating steps (a) to (c) to develop a user profile; and
 - (e) assessing cognitive impairment in the user by comparing the user profile with a reference profile.
- 15 2. A method according to claim 1, wherein step (d) includes repeating steps (a) to (c) for a range of pre-determined test stimulus exposure durations.
3. A method according to claim 1 or claim 2 wherein step (a) includes the step of presenting a focal point stimulus to the user before presenting the
20 visual test stimulus to the user.
4. A method according to any one of claims 1 to 3, further including the step of calculating a representative error rate representing the proportion of inaccurate responses for each of the pre-determined test stimulus exposure
25 durations.
5. A method according to claim 4, wherein the user profile includes an error rate curve charting the representative error rate relative to the pre-determined test stimulus exposure durations.
- 30 6. A method according to claim 4 or claim 5 wherein, the representative error rate is calculated from a mean of the error of each response at the pre-determined test stimulus exposure duration.

7. A method according to any one of the preceding claims, further including the step of calculating an average response time for each of the pre-determined test stimulus exposure durations.
- 5 8. A method according to claim 7, wherein the user profile includes a response rate curve charting the mean response time relative to the pre-determined test stimulus exposure durations.
- 10 9. A method according to any one of the preceding claims wherein consequent presentations of a test stimulus to the user are separated by a uniform time interval.
10. A method according to any one of the preceding claims, wherein the reference profile is generated using:
- 15 (a) data obtained from a reference group including cognitively normal individuals; or
- (b) data previously generated by the user.
- 20 11. A method according to any one of the preceding claims, wherein the test stimulus exposure duration is between 10ms and 300 ms.
12. A method according to any one of the preceding claims, wherein the user has a choice of two different responses for responding to each test stimulus.
- 25 13. A method according to claim 12, wherein one of two or more different test stimuli are presented to the user in step (a).
14. A method according to claim 13, wherein each of the test stimuli are presented an equal number of times.
- 30 15. A method according to any one of the preceding claims, wherein the test stimulus is masked by a mask that includes at least one full circle or curved line.

16. A method according to claim 15, wherein the mask is an image including a plurality of full circles or parts thereof.

5 17. A method according to claim 15, wherein the mask is an image including a plurality of curved lines or parts thereof.

18. A method of assessing visual impairment of a user, including the steps of:

10 (a) presenting a visual test stimulus to the user for a pre-determined test stimulus exposure duration;

(b) masking the test stimulus by placing a mask over or in place of the test stimulus;

15 (c) measuring a response from the user, the response providing information about the user's perception of specific characteristics of the test stimulus together with the time taken for the user to respond;

(d) repeating steps (a) to (c) using the same pre-determined test stimulus exposure duration to develop a user profile; and

(e) comparing the user profile with a reference profile to assess visual impairment of the user.

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19. A method of assessing visual impairment of a user according to claim 18 wherein step (a) includes the step of presenting a focal point stimulus to the user before presenting the visual test stimulus to the user.

25 20. A method of assessing cognitive impairment of a user, including the steps of:

(a) presenting a visual test stimulus to the user for a pre-determined test stimulus exposure duration;

30 (b) masking the test stimulus by placing a mask over or in place of the test stimulus;

(c) measuring a response from the user, the response including:

i. a response time; and

ii. a correct or incorrect indication of the visual test stimulus;

(d) repeating steps (a) to (c) to develop a user profile; and

(e) comparing the user profile to a reference profile to assess cognitive impairment in the user.

21. A method of assessing cognitive impairment of a user wherein step
5 (a) includes the step of presenting a focal point stimulus to the user before presenting the visual test stimulus to the user.

22. A system for assessing cognitive impairment of a user, including:
(a) presentation means for presenting a visual test stimulus to the
10 user for a pre-determined test stimulus exposure duration;
(b) mask means for masking the test stimulus after presentation of the test stimulus to the user;
(c) response measuring means to measure the response from the user after presentation of the visual test stimulus;
15 (d) processing means to process the response from the user over one or a range of pre-determined test stimulus exposure durations to develop the user profile over the range; and
(e) assessment means to compare the user profile to a reference profile to assess cognitive impairment in the user.

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23. A system for assessing cognitive impairment of a user according to claim 22 further including focal point presentation means for presenting a focal point stimulus to the user.

25 24. A mask for masking visual test stimulus, the mask including an image having a plurality of filled circles or curved lines or parts thereof.

25. A method according to any one of claims 1 to 18 wherein the user profile is a response curve.

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